Course Outline

Course Code : DBA3702
Course Title : Descriptive Analytics with R
Class Date : From 7/8/2023 To 17/11/2023
Semester : Semester 1, Academic Year 2023/24
Faculty : A/P Liu Qizhang
Department : Analytics & Operations
Email : bizlqz@nus.edu.sg
URL : https://bizfaculty.nus.edu.sg/faculty-details/?profId=188
Telephone : 65165822

Overview

We are now at the era of big data. Data and algorithms dominate the day. Competitive advantage, for more and more enterprises, is obtained via data analytics and idea sharing in the current fast-paced, data-intensive, and open-source business environment. The capability of understanding data, digging out valuable insights from data, and thus making right managerial decisions accordingly has gradually become an essential skill that business graduates must master in order to excel in their career.

Course Objectives

This course prepares students with fundamental knowledge of using R, a powerful complete analytical environment, to organize, visualize, and analyze data. It is, however, not a programming course. It will focus on case studies that will train students how to summarise and present findings in a structured, meaningful, and convincing way.

Assessment

Assessment Components	Weightage
Class participation	20%
Group Project	30%
Test 1	25%
Test 2	25%

Schedule and Outline

Lesson/ Week	Date	Session (lesson summary or outline / learning objectives / preparation / cases & assignments / follow-up readings & resources)
1	15/8/2023	Course overview, Introduction to R Environment
2	22/8/2023	R Basics: Data types and data structure
3	29/8/2023	Basic Data Wrangling: Data sorting, data indexing, data wrangling

4	5/9/2023	Advanced Data Wrangling: Loading data, Scrapping data online, data cleaning, reshape data
5	12/9/2023	Programming Structure: Function, programming structure, apply functions
6	19/9/2023	Simulation modelling
7	03/10/2023	Test 1
8	10/10/2023	Data exploration, basic data visualisation
9	17/10/2023	Data transformation, Visualising spatial data
10	24/10/2023	Introduction to Shiny and ShinyDashboard
11	31/10/2023	Case study 1
12	7/11/2023	Market positioning, PCA
13	14/11/2023	Project presentation

General Guide & Reading (e.g. Case preparation guide, project report guide, main textbook & supplementary materials, etc)

Reading list

"Business Analytics for Managers", Wolfgang Jank, Springer.
"Data Mining and Business Analytics with R", Johannes Ledolter, Wiley.
"Marketing Data Science", Thomas W. Miller, Pearson.

In addition, the course will provide a list of videos for students to watch before each class. Details will be given on Canvas.

Academic Honesty & Plagiarism

Academic integrity and honesty is essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

Plagiarism is 'the practice of taking someone else's work or ideas and passing them off as one's own' (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - You have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. In case of any doubts, you should consult your instructor.

Additional guidance is available at:

- Administrative Policies
- http://www.nus.edu.sg/registrar/administrative-policies-procedures/acceptance-record#NUSCodeofStudentConduct
- http://nus.edu.sg/osa/resources/code-of-student-conduct